

Serial No.: 10/802,236
Group Art Unit No.: 1624

REMARKS

Amendments

Please enter the amendments and new claims set forth above. Claim 18 recites a compound identified as "E23" on page 23 of the specification.

Rejection under 35 USC §101

Claims 12, 13, 15 and 16 have been rejected as drawn to non-statutory subject matter due to the using the word 'use' in same. These 4 claims are cancelled herewith. This rejection is now moot.

Rejection under 35 USC §112, ¶1

Claims 1-8, and 11-16 have been rejected under §112, ¶1 as containing subject matter not described in the specification.

Regarding claims 1-8, applicants have reviewed this comment and revised claim 1 and have revised claim 1 along the lines of the examiner's comments. P¹ is now limited to phenyl, naphthyl, pyrazolyl, or an aromatic ring having 1 to 3 heteroatoms which are O, N, or S. And P² and P³ are now limited to phenyl, naphthyl or an aromatic ring having 1 to 3 heteroatoms which are O, N, or S.

In light of these amendments, applicants submit they have overcome the examiner's basis of rejection under §112, ¶1 to claims 1-8

With regards to the rejection of claims 11-16 under §112, ¶1, the amendments to claim 1 should address the examiner's rejection because the scope of claim 1 on which claim 11 depends has been truncated to a degree where it should be deemed to be compliant with §112, ¶1. Claims 12-13 have been deleted. Claim 14 depends on claim 1, which should be deemed to be compliant with §112, ¶1 in light of the amendments above. Claims 15 and 16 have been deleted.

Rejection under 35 USC §112, ¶2

Claims 11-13 and 15-16 have been rejected under §112, ¶2 as being indefinite. Claim 11 is said to be incomplete in that N is missing a bond. A hydrogen has been added to this N in the foregoing amendment to claim 11 providing the missing bond.

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Claims 12, 13, 15 and 16 have been deleted herein above, rendering moot the rejection of these claims under §112, ¶2.

Rejection Under 35 USC §103(a) and Double Patenting Rejection

Claims 1-9 and 11-16 have been rejected under 35 USC 103(a) as being unpatentable over three published PCT applications, WO 95/06637 published 09 March 1995, WO 98/47885 published 29 October 1999 and WO 98/50358 published 12 November 1998. Each application listed the US as a designated country and was progressed into the US at the 30th month as §371 applications. The WO 95/06637 application became USSN 09/403,216, abandoned. Application WO 98/47885 was assigned USSN 09/403,149 and after successful prosecution issued as USP 6,159,797. Application WO 98/50358 was assigned USSN 09/605,022 and after successful prosecution issued as USP 5,696,122. The examiner refers to these collectively as the "Gaster" applications and patents.

The seminal difference between the Gaster art and this application is replacing a hydrogen on each of the two carbons adjacent to the remote nitrogen of the piperazine ring with two alkyl groups, as illustrated by methyl groups. In this application the nomenclature denotes these as the 3-position and the other at the 5-position. Also, these alkyl groups are in only 1 configuration, the *cis* configuration. It is noted the examiner has not cited art showing a similar substitution change in similar molecules which antagonize the serotonin 5-HT_{1b} receptor.

This causes the configuration of the piperazine ring to be locked into a particular 3-dimensional structure. Basically, the piperazine ring can no longer exist in both a chair and a boat configuration; it is only in the boat configuration. This limits the steric interaction of the piperazine group with the receptor, as compared with the Gaster art where both boat and chair configurations can exist. Also, the two methyl groups introduce a steric bulk which could modulate interaction with the receptor. In addition, these two methyl groups may affect the basicity and/or nucleophilicity of the 4-position nitrogen, which could also have an affect on the compounds' interaction with the receptor. In sum, introducing two methyl groups, and introducing them at the 3- and 5-positions on the piperazine ring, creates a change in that ring's physical and chemical characteristics that make speculative their activity as serotonin antagonists in light of any teaching in the cited art as to the possible consequence(s) of this change.

Consequently, applicants request withdrawal of the §103(a) rejection based on the Gaster references

As for double patenting vis-à-vis US patents 5,696,122 and 6,159,797, applicants refer the examiner to the foregoing discussion on obviousness. Applicants believe the 3,5-dialkylpiperazine-substituted compounds of this invention represent an inventive step over the '122 and '797 patents and request that the examiner reconsider her holding of double patenting of the obviousness type.

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In addition, applicants wish to note that since those patents both have a priority date prior to 29 November 2000, the pre-AIPA rules apply to determining whether they are art under 35 USC 102(a) or (b), or 102(e), (g) and (f). Both patents have a US filing date reaching back more than 1 year prior to the earliest available US filing date of this application which is 21 September 2000. Applicants raise the question as to whether the provisions of 103(c) provide a safe haven via a terminal disclaimer for the pending claims of this application over the prior-granted Gaster US patents.

Allowed Claim 10

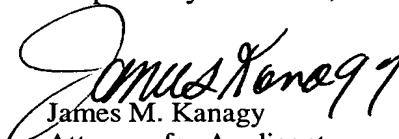
Applicant's note the examiner's comment that claim 10 is not suggested by the cited prior art and would be allowable, apparently, is written in independent form. That has been done herein above. If the examiner persists in her rejection of the claims remaining herein as of this amendment, other than claim 10, applicants reserve the right to either file a divisional application directed to claim 10, or to delete all but claim 10 from this application, in either case without prejudice to pursuing further the residual claims and/or any other subject matter set out in the specification of this application.

Conclusion

This reply is intended to distinctly and specifically point out presumed errors in the Examiner's Action, to respond to every ground of objection and rejection, and to advance this case to allowance.

In view of the above remarks, reconsideration of this application is requested. Should the Examiner have any questions or wish to discuss any aspect of this case, the Examiner is encouraged to call the undersigned agent at the number below.

Respectfully submitted,


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